**K-5 Math Lesson Plan**

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| **Teacher:** Breedlove | | | | **Grade:** 3rd | | | | **Date(s)**: August 28, 2012 |
| **Unit Title:** Unit 1**-**Place Value with Addition and Subtraction within 1,000 | | | | | **Corresponding Unit Task:** Taught prior to Performance Task 1; ***This lesson will mainly focus on addition, but can be used to transition into place value and subtraction*** | | | |
| **Essential Question(s):** How does place value understanding help me add and subtract numbers? What strategies can I use to add and subtract multi-digit numbers? Why do I need to know multiple strategies to add and subtract numbers? | | | | | | | | |
| **Materials/Resources** | | | | | **Essential Vocabulary** | | | |
| **Teacher:**  -Timer (or use online timer)  -Group Labels  **-**Chart  -Base-10 blocks  -Recording sheet to take notes when observing groups and asking questions  -Vocabulary Cards (provided by C&I)  Websites**:**  <https://ccgps.org/3.NBT_MP20.html>  <http://nlvm.usu.edu/en/nav/frames_asid_154_g_1_t_1.html> | | | **Student:**  -Bag/Basket of Base-10 Blocks per group  -Dry-Erase Board/ Marker per group  -Set of Agree/Disagree Cards per group  -Clipboard  -Place Value Structures activity sheet (Form A or B)  -Place Value Reference Sheet (optional)  -3-Digit Addition Split  activity (extension) | | | add, addition, addend, sum, place value, hundred(s)-flats, ten(s)-rods, one(s)-units, about/approximately  subtract, subtraction, difference  *\*See vocabulary strategies listed in Unit 1* | | |
| **Learning Experience** | | | | | | | | |
| **8 Mathematical Practices:**  **√** 1. Make sense of problems and persevere in solving them.  **√** 2. Reason abstractly and quantitatively.  **√** 3. Construct viable arguments and critique the reasoning of others.  **√** 4. Model with mathematics.  **√** 5. Use appropriate tools strategically.  **√** 6. Attend to precision.  **√** 7. Look for and make use of structure.  **√** 8. Look for and express regularity in repeated reasoning. | **Common Core State Standards:**  **3.NBT.2** Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. | | | | | | | |
| **I Can Statement(s):**  -I can use base-ten blocks to add.  -I can use base-ten blocks to subtract.  -I can use place value understanding to add.  -I can use place value understanding to subtract. | | | | | | | |
| **Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)  Divide students into groups of 3 or 4 depending on class size. Give each group a bag or basket of base-10 blocks. Be sure to include multiple flats, rods and units. Tell the students that they are going to be using the base-10 blocks to build a structure of their choice, but they only have 3 minutes to construct it. Give them a couple of minutes to talk with one another about what they would like to build before time begins. Allow students to build their structure before going on to Teacher Directed.  \*Online Timer: <http://www.online-stopwatch.com/>  **Group Management Suggestion:**  Assign or allow students to choose group roles.   1. Builder (builds the structure decided on by the group members) 2. Materials Manager (keeps up with the materials; cleans area) 3. Writer (records on dry-erase board) 4. Spokesperson (speaks/answers for the group)   *\*Label each group (with a number, letter, name, etc.) so students can travel in order and/or ensure they visit each structure.* | | | | | | | |
| **Teacher Directed:**  When time has expired, have students put their hands on top of their heads. Have each group go to the carpet or another area of the room so students are not tempted to touch the structures. Tell students that they are going to use what they know about the value of the base-10 blocks to do multiple activities today.  Have the following table pre-written on chart paper or the board. Record values as students answer questions about the base-10 blocks. Keep visible for the rest of the lesson.   |  |  |  | | --- | --- | --- | | **Flat** | **Rod** | **Unit** | | 1 flat = | 1 rod = | 1 unit = | | 2 flats = | 2 rods = | 2 units = | | 5 flats = | 5 rods = | 5 units = | | 10 flats = | 10 rods = | 10 units = |   Hold up a flat. *What is the value of one flat?* (100)  Hold up 2 flats. *If one flat has the value of 100,*  *what is the value of 2 flats?* (200)  Hold up 5 flats. *What is the value of 5 flats?* (500)  *Do you notice any patterns?*  *What would be the value of 10 flats?* (1,000) *How do you know?*  Have students share their reasoning of how they knew the value of 10 flats.  \*Repeat using rods.  Ask questions that encourage students to make connections with the flat(s). (10 rods = 1 flat)  \*Repeat using units.  Ask questions that encourage students to make connections with the rod(s) and the flat(s). (10 units = 1 rod; 100 units = 1 flat)  Quickly build a simple structure using the base-ten blocks and have students estimate its value. Allow students to share their estimate with a shoulder partner and explain their thinking. Have two or three students share their prediction, encouraging them to use the word “about” or “approximately” before the number. Ask the other students, *Do you agree or disagree? Why?* As a whole group, deconstruct the building and sort the flats, rods and units. First, count the flats and write the number on the board. Then, count and record the rods and the units, placing an addition sign between the values. (Expanded Form: 300 + 60 + 9) *What is the exact value of this structure?* (369)  *Is the exact value close to your estimation? If not, why?* | | | | | | | |
| **Guided Practice:**  Have students return to their groups. Now, have the students look at their structure and estimate (not count) its value. Have the writer get the dry-erase board and write the group’s estimation using the vocabulary word, “about” or “approximately” before the number.  [http://ts2.mm.bing.net/th?id=I4623408312943193&pid=1.1](http://www.bing.com/images/search?q=student+dry+erase+board&view=detail&id=1A8B62EF06DEF575CCF559B76EC327677EBC3BF3&first=0&FORM=IDFRIR)  **Example structure:**  **About**  **260**    Give each group a baggie of agree/disagree cards. Have groups carousel around the room to look at (not touch) the other structures and estimations. Each group should discuss and explain if they agree or disagree with the estimation of the other groups. The Spokesperson may be in charge of placing the appropriate card beside the dry-erase board before moving to the next group’s structure.  After looking at each group’s building and estimation, the students should return to their structure and look at their feedback. Pass out “Place Value Structures” activity sheet to each student. Allow them to deconstruct their building and sort the base-10 blocks like the teacher modeled earlier. Students should count the flats, rods, and units and write the number in expanded form at the appropriate place on the activity sheet to find its exact value. The teacher should walk around and monitor group work. Have students “unsort” the base-10 blocks afterwards. | | | | | | | |
| **Independent Practice:**  Each student should get a clipboard and travel around to the other groups to complete the activity sheet independently. | | | | | | | |
| **Closing/Summarizing Strategy:**  Reflect back on the specific EQs from the unit that were addressed in this lesson. *How does place value understanding help me add numbers?*  *What strategy can I now use to add multi-digit numbers?*  *How could you use this strategy with subtraction? Explain.* | | | | | | | |
| **Differentiation Strategies** | | | | | | | | |
| **Extension** | | **Intervention** | | | | | **Language Development** | |
| * “On the Back Activity” located at the bottom of the activity sheet (Form A) * Give students a three-digit number and have them build two different structures to match the given value * “3-Digit Addition Split” activity * Find the value of 2 or more structures (added together) | | * Modified “Place Value Structures” activity sheet; (Form B) * Use a calculator to check the exact value * Give students less place value blocks to ensure lower values | | | | | * Use “Place Value Reference Sheet” provided * Use a Place Value Mat when sorting base-10 blocks | |
| **Assessment(s):**  -Teacher should collect the “Place Value Structures” activity sheet from each student  -Reflect upon written notes from teacher observations and questioning (specific student responses-understandings and misconceptions) | | | | | | | | |
| **Teacher Reflection:** (Next steps?)   * What went well? * Student understandings/misconceptions * Specific notes about students’ thinking * What do I need to reteach/review tomorrow or in the future? * New ideas or changes for next time | | | | | | | | |